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Computational Urbanism: Confronting the Paradox of Endurance & Obsolescence

“A clean sheet of paper has no blotches, and so the newest and most beautiful words can be painted on it”

Mao Tse-tung, 1966

This conference paper will investigate the evolutionary nature of cities and the design-life of buildings, addressing issues associated to the duration and obsolescence of architecture and urbanism through projective computational methods. Far from a celebration of impermanence and ephemerality, a paradox arises between the seeming parallel necessities of adaptive forms of urbanism, coupled with the need for greater cultural, social, environmental and economic endurance of contemporary architecture. This research approach enlists speculative design work driven by advanced design and productions techniques, on a range of scales dealing with duration and design life of architecture and urbanism. As an alternative to throw-away architecture, innovation in computational and material research, aims for increasing the design life of buildings, and the capacity of cities to evolve and adapt to dynamic contextual conditions.

Given the current instable state of the global economy, along with planet earth's changing climatic environment, there has never been a more crucial time to challenge, reassess and propose alternatives to conventional urban masterplanning and its associated techniques. Masterplanning strategies which seek an enduring final state of urban completion tend to lead to dysfunctional cities with limited capability to adapt and change, along with quickly obsolescent buildings. During the gold rush of global urbanisation in recent years, the pre-eminent form of representation of future urbanism has been rendered images of 3d digital models. This over-reliance on narrow, singular, inflexible pictures of the future, ones which disregard the inherent complexity of the modern world, and the manifold of forces, agents and contingencies which contribute to shape the future. In the presentation of this paper, I will introduce forms of urbanism which aim for alternatives to masterplans based on stable urban typologies and teleological final states, necessitating the coding of mechanisms with capabilities to adapt to future contingencies. This approach to contemporary urbanism requires new vehicles with which to manage the immensely complex qualities of interaction, communication and exchange that characterise the twenty-

first-century city. These investigations into aggregate, incremental, and time-based models of urban growth, correlate topdown and bottom-up systems, played out as both a cyclic set of quotidian, weekly, and seasonal phenomena, as well as longer-term timescales of urban growth and change.

Not limited to the scale of urbanism being always/already relational, associative design methods aim for coherent yet heterogeneous and differentiated forms of architectural, structural and systemic organisation and expression. This approach to urbanism and architecture necessitates computation to manage dynamic information related to the varied performance of urban environments and architectural spaces, and the prototyping of innovations beyond standards and conventions. Parallel to countering the homogeneity of fast-track urbanism, these design methods aim towards an ordered sense of spatial differentiation, diversity and difference. The potentials of these new tools and concepts are for mass customisation on the scale of the city – challenging repetitive, Fordist production and the mistakes made for decades in Europe and the Americas. Inherent to this position is a new concept of architectural typology, one which is not stable, fixed, and static, but rather dynamic, multiplicitous and variable.

SESSION #8: LIMINAL PERSPECTIVES

IRENA LATEK, Université de Montréal

Collage mouvant - penser et concevoir l'espace urbain avec les nouveaux médias

Our communication proposes a presentation of research conducted by medialabAU, research/creation laboratory, that addresses the need to expand analytical and conceptual tools inspired by new spaces and new urbanities. The transcription into an intelligible form that reflects cultural and symbolic intentions appears to be particularly symptomatic. This approach that aims beyond the realm of constructed reality is necessarily multidirectional. For if pragmatic issues adopt the conventions shared by producers of the built environment – and this common ground at once narrows and stabilizes these conventions – the symbolic values of expression must naturally draw from the entirety of diversified forms of human expression – and they subject architectural creation to all artistic techniques and genres.